

What is claimed is:

1. A method of separating a thin die from a support body of a semiconductor wafer, the thin die attached to the support body by an attachment mechanism, the method comprising the steps of:

5           positioning the wafer on a rigid backing having a hole, the hole  
                   positioned beneath the thin die;  
                   positioning a tip of a handler above the thin die, the tip having a  
                   passageway to a vacuum source;  
                   positioning an ejection pin in a spaced apart relationship beneath the  
 10           thin die;  
                   moving the tip of the handler downward toward the thin die to break  
                   the attachment mechanism and clamp the thin die between the  
                   tip of the handler and the ejection pin; and  
                   moving the ejection pin upward in the direction of the tip of the  
 15           handler until the thin die is extracted from the wafer.

2. The method of claim 1 wherein the attachment mechanism includes a plurality of tethers that extends between the thin die and the support body.

20           3. The method of claim 1 wherein the tip of the handler is made of a flexible material.

            4. The method of claim 1 wherein the handler further has a spring and a rigid body portion, the spring configured to allow the tip of the handler to move in  
 25           relation to the rigid body portion.

5. The method of claim 1 further comprising the step of activating the vacuum source to provide a suction force through the passageway in the tip prior to the step of moving the tip of the handler downward toward the thin die.

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6. The method of claim 1 wherein the thin die remains clamped between the tip of the handler and the ejection pin during the step of moving the ejection pin upward in the direction of the tip of the handler.

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7. The method of claim 1 further comprising the step of lifting the tip of the handler and thin die away from the ejection pin.

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8. The method of claim 7 further comprising the steps of:  
 positioning the tip of the handler and thin die above a surface;  
 moving the tip of the handler and thin die downward toward the  
 surface;  
 placing the thin die on the surface.

9. The method of claim 8 wherein the surface is a diaphragm for  
 measuring the pressure of a liquid.

10. A method of separating a thin die from a support body of a semiconductor wafer, the thin die attached to the support body by a plurality of tethers that extend across an open trench in the wafer, the method comprising the steps of:

5 positioning a tip of a handler above the thin die, the tip having a passageway to a vacuum source;  
activating the vacuum source to provide a suction force through the passageway of the tip;  
positioning an ejection pin in a spaced apart relationship beneath the  
10 thin die;  
moving the tip of the handler downward toward the thin die to break the plurality of tethers; and  
clamping the thin die between the tip of the handler and the ejection  
pin.

15 11. The method of claim 10 further comprising the step of moving the ejection pin upward until the thin die is extracted from the wafer.

12. The method of claim 10 wherein the tip of the handler is made of a  
20 flexible material.

13. The method of claim 10 wherein the handler further has a spring and a rigid body portion, the spring configured to allow the tip of the handler to move in relation to the rigid body portion.

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14. The method of claim 10 further comprising the step of lifting the tip of the handler and thin die away from the ejection pin.

5 15. The method of claim 14 further comprising the steps of:  
positioning the tip of the handler and thin die above a surface;  
moving the tip of the handler and thin die downward toward the  
surface;  
placing the thin die on the surface.

10 16. The method of claim 15 wherein the surface is a diaphragm for  
measuring the pressure of a liquid.

17. A method of separating a thin die from a support body of a semiconductor wafer, the thin die having an outer perimeter defined by an open trench in the wafer, the open trench positioned between the thin die and the support body of the wafer, the thin die attached to the support body by a plurality of tethers that extend  
5 across the open trench, the method comprising the steps of:

positioning the wafer on a rigid backing having a hole, the hole

positioned beneath the thin die;

positioning an ejection pin within the hole of the backing and beneath

10 the thin die;

positioning a tip of a handler above the thin die, the tip having a

passageway to a vacuum source;

activating the vacuum source to provide a suction force through the

passageway of the tip;

15 moving the tip of the handler downward toward the thin die to break

the plurality of tethers; and

moving the thin die so that the thin die is positioned between the tip of

the handler and the ejection pin.

20 18. The method of claim 17 wherein the tip of the handler is made of a flexible material.

19. The method of claim 17 wherein the handler further has a spring and a rigid body portion, the spring configured to allow the tip of the handler to move in  
25 relation to the rigid body portion.

20. The method of claim 17 further comprising the steps of:
- positioning the tip of the handler and thin die above a surface;
- moving the tip of the handler and thin die downward toward the
- 5 surface;
- placing the thin die on the surface.

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